

CLAIMS

1. A method for manufacturing a pneumatic tire, wherein at least one kind of tire constitutive member is formed on an outer peripheral side of a carcass band, said method comprising the steps, for forming a green tire, of:

5 radially outwardly expanding a widthwise center portion of a substantially cylindrical carcass band; and

winding and joining an unvulcanized rubber strip onto an outer peripheral surface of the expanded carcass band, thereby forming said tire constitutive member.

10 2. A method according to claim 1, wherein the strip is formed to have a cross-section that is determined depending on the shape of the tire constitutive member, and the strip is wound such that, for each turn, a previously wound strip is superimposed at least partially by a successively wound strip, so as to allow a resulting lamination to form the constitutive member.

15 3. A method claim 1, wherein two or more kinds of unvulcanized rubber strips are wound one after another, to form a tire constitutive member.

4. A method according to claim 1, wherein the tire constitutive member includes any one of bead filler, sidewall, rubber chafer, buffer rubber, and belt undercushion.

20 5. A method for manufacturing a pneumatic tire, wherein at least one kind of tire constitutive member is formed on an outer peripheral side of a carcass band, said method comprising the steps, for forming a green tire, of:

radially outwardly expanding a widthwise center portion of a substantially cylindrical carcass band;

25 applying a belt layer onto an outer peripheral surface of the expanded carcass band; and

winding and joining at least one kind of unvulcanized rubber strip onto an outer peripheral surface of the belt layer, thereby forming said tire constitutive member.

30 6. A method according to claim 5, wherein the strip is formed to have a cross-section that is determined depending on the shape of the tire constitutive member, and the strip is wound such that, for each turn, a previously wound strip is superimposed at least partially by a successively wound strip, so as to allow a

resulting lamination to form the constitutive member.

7. A method according to claim 5, wherein the tire constitutive member includes any one of tread, interlayer cushion between adjacent belt layers, and tread undercushion.

5 8. A method for manufacturing a pneumatic tire comprising combining a manufacturing method according to any one of claims 1 to 4, and another manufacturing method according to any one of claims 5 to 7 as appropriate in an appropriate order according to a given requirement.

10 9. A method for manufacturing a pneumatic tire including insert plies in its sidewall portions, wherein said insert plies are formed on an outer peripheral side of a carcass band, said method comprising the steps, for forming a green tire, of:

15 radially outwardly expanding a widthwise center portion of a substantially cylindrical carcass band having marginal portions to which bead rings are attached, by moving the bead rings axially toward each other;
forming the insert plies by applying, on both side portions of the carcass band separated from each other with the center portion therebetween, reinforcing cords to extend approximately in parallel with the circumferential direction; and
enhancing a degree of radial expansion of the carcass band by further
20 moving the bead rings axially toward each other, so as to increase a tension of the reinforcing cords and thereby bring an outer face of a resultant crown portion into contact with a belt and a tread for joining.

10. A method according to claim 9, wherein the insert plies are formed by continuously winding a reinforcing cord in a spiral form.

25 11. A method according to claim 9, wherein the enhanced degree of expansion of the carcass band causes the reinforcing cords to be forcibly buried into a coating rubber of the carcass band.

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